

Date _____

1. Solve.

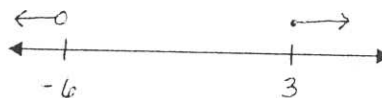
$$\frac{x+1}{2} + \frac{x-2}{3} = \frac{2}{3}$$

2. Solve.

$$\frac{1}{2}(x+3) - \frac{3}{4}(x-2) = -2$$

3. Graph: $-3 < x \leq 4$ 

4. Write an inequality that represents the graph.



5. Solve. (See example 2 on p. 34)

$$2|2x-1| - 3 = 13$$

6. Solve. (See example 4 on p. 35.)

$$|3x+2| > 14$$

7. Solve. (Use a number line to determine the solution.)

$$-3x > 12 \text{ and } \frac{1}{2}x > -1$$

8. What is the solution of

$$\frac{1}{2}x - 4 > 0 \text{ and } \frac{1}{2}x + 1 < 0$$

- a. all real numbers
- b. $x > 8$
- c. $-2 < x < 8$
- d. empty set

Advanced Algebra Warm-Up

Date _____

Name _____

1. State the slope and y-intercept of $2x + 5y = 20$.

2. a) State the vertex of $y = |mx + b| + c$
(See middle of p. 86)

- b) State the vertex of $y = |2x + 8| - 1$

3. State the vertex and axis of symmetry.

a. $y = 3x^2 + 12x - 1$

b. $y = 3(x - 4)^2 + 6$

4. Complete the square.

$$x^2 + 6x - 4 = 0$$

5. Complete the rules for exponents.

$a^m \cdot a^n = \underline{\hspace{2cm}}$

$(a^m)^n = \underline{\hspace{2cm}}$

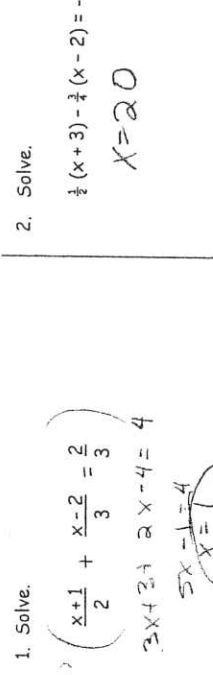
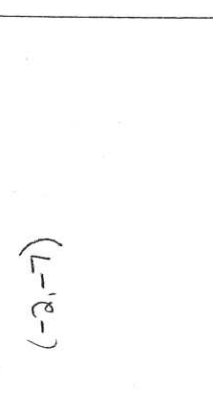
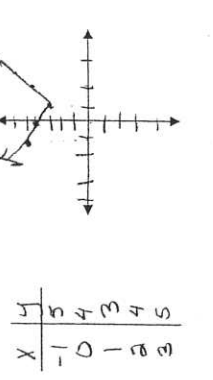
6. Simplify.

a. $(x^2y)(x^3y^5)$

b. $(2x^5y^2)^3$

c. $(x - 6)(x + 7)$

d. $(c - 4)(c^2 + 4c + 16)$



1. State the vertex of $y = |x + 2| - 7$

$(-2, -7)$

2. Make a T-chart and graph: $y = |x - 1| + 3$

x	y
-1	5
0	4
1	3
2	4
3	5

3. Write an equation for an absolute value function that translates 3 units to the right and 8 units up from the parent graph.

$y = |x - 3| + 8$

4. Write an equation of a line in slope-intercept form that contains (5, 6) and (4, 8).

$m = \frac{-2}{-1} = 2$
 $b = -2(5) + 6 = -4$
 $y = 2x - 4$

5. Write an equation of a line in slope-intercept form that contains (-8, 3) and has a slope of $\frac{1}{4}$.

$3 = \frac{1}{4}(-8) + b$
 $3 = -2 + b$
 $b = 5$
 $y = \frac{1}{4}x + 5$

6. Write an equation of a line in slope-intercept form that contains (5, 6) and (4, 8).

$m = \frac{-2}{-1} = 2$
 $b = -2(5) + 6 = -4$
 $y = 2x - 4$

7. If $m = 10$, then the parallel slope is 10 and the perpendicular slope is $-\frac{1}{10}$

8. Explain why or why not the graph is a function.

There is more than 1 range for several domains.

1. Solve.

$\frac{1}{2}(x+3) - \frac{1}{3}(x-2) = -2$
 $x = 20$

2. Solve.

$\frac{1}{2}(x+3) - \frac{1}{3}(x-2) = -2$
 $x = 20$

3. Graph: $-3 < x \leq 4$

$x < -6$ or $x \geq 3$

4. Write an inequality that represents the graph.

$x < -6$ or $x \geq 3$

5. Solve. (See example 2 on p. 34)

$2|2x - 1| - 3 = 13$
 $4, 5, -3, 5$

6. Solve. (See example 4 on p. 35)

$|3x + 2| > 14$
 $x < -5, 3$ or $x > 4$

7. Solve. (Use a number line to determine the solution.)

$-3x > 12$ and $\frac{1}{2}x > -1$
 $x < -4$ and $x > -2$
 $x < -4$

8. What is the solution of $\frac{1}{2}x - 4 > 0$ and $\frac{1}{3}x + 1 < 0$?

a. all real numbers
 b. $x > 8$
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Advanced Algebra Warm-Up

Date _____

Name Key

1. State the slope and y-intercept of $2x + 5y = 20$.

$$\frac{5y}{5} = \frac{-2x}{5} + \frac{20}{5}$$

$$y = -\frac{2}{5}x + 4$$

2. a) State the vertex of $y = |mx + b| + c$
(See middle of p. 86)

$$(, c)$$

- b) State the vertex of $y = |2x + 8| - 1$

$$y = 2|x + 4| - 1$$

$$(-4, -1)$$

3. State the vertex and axis of symmetry.

a. $y = 3x^2 + 12x - 1$

$$x = \frac{-12}{2(3)} = -2 \quad (-2, -13)$$

$$3(-2)^2 + 12(-2) - 1$$

b. $y = 3(x - 4)^2 + 6$

$$x = 4$$

$$(4, 6)$$

4. Complete the square.

$$x^2 + 6x - 4 = 0$$

$$x^2 + 6x + 9 = 13$$

$$(x + 3)^2 = 13$$

$$x + 3 = \pm\sqrt{13}$$

$$x = -3 \pm \sqrt{13}$$

5. Complete the rules for exponents.

$$a^m \cdot a^n = \underline{\hspace{2cm}}$$

$$(a^m)^n = \underline{\hspace{2cm}}$$

6. Simplify.

a. $(x^2y)(x^3y^5)$

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